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ANALYSIS OF MAJOR ITEM REDISTRIBUTION/SUBSTITUTION POLICIES. V0--ETC(U)  
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FINAL REPORT

PROJECT NUMBER 904



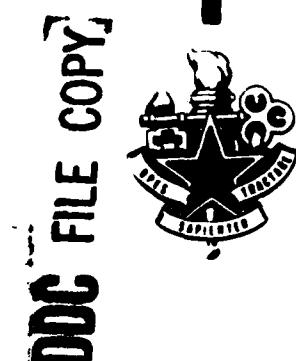
ANALYSIS OF MAJOR ITEM  
REDISTRIBUTION/SUBSTITUTION POLICIES

VOLUME 1

MAY 1980

U.S. ARMY  
LOGISTICS MANAGEMENT CENTER  
FORT LEE, VIRGINIA  
23801

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VOLUME 1

LOGISTICS STUDIES OFFICE  
PROJECT NUMBER 904

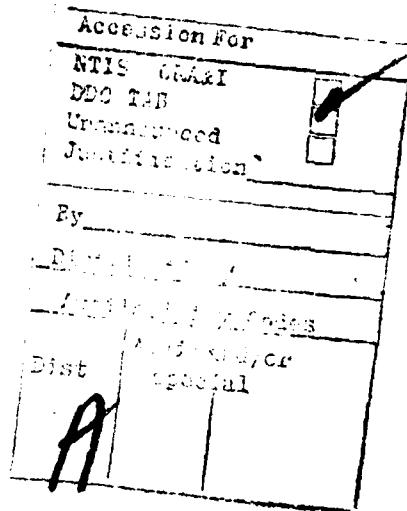
FINAL REPORT  
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ULDIS REX POSKUS

LOGISTICS STUDIES OFFICE  
US ARMY LOGISTICS MANAGEMENT CENTER  
FORT LEE, VIRGINIA 23801

## ABSTRACT

The prevalent utilization of substituted major items for authorized major items requires that the management of these substitutes be improved throughout DARCOM. This report investigates four primary areas of interest to HQ DARCOM: the cost of redistributing existing substitutes, the rationale for substituting non-type classified items for authorized items, a policy for within-LIN substitutions, and the feasibility of loaning rather than issuing substitute items. Various side aspects of substitution are also investigated. Recommendations are proposed. This report is published in two volumes.



Report Title: Analysis of Major Item Redistribution/Substitution Policies

Study Number: LSO 904

Study Initiator and Sponsor: Director for Plans, Doctrine and Systems (DRCPS-S)  
US Army Materiel Development and Readiness Command

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## EXECUTIVE SUMMARY

1. Authority for the Study. The sponsor of the study is the Director for Plans, Doctrine and Systems (DRCPS-S), US Army Materiel Development and Readiness Command (DARCOM). Tasking was per letter, DRCPA-S, HQ DARCOM, 6 February 1979, subject: Request for Logistics Studies and Inclosure 1-1 thereto.
2. Problem Statement. The prevalent utilization of substituted major items for authorized major items requires that these substitutes be better controlled and managed throughout DARCOM. This improved management and control can be brought about by:
  - 2.1 Developing and publishing DARCOM policy on these items.
  - 2.2 Informing item managers, HQ DARCOM managers, and management levels at the US Army Training and Doctrine Command (TRADOC), the US Army Forces Command (FORSCOM), and the National Guard Bureau of items being used as substitutes.
  - 2.3 Showing how these items are currently being used.
  - 2.4 Developing improvements in how they are used.
3. Objectives. Four objectives were ascribed to this study for major items:
  - 3.1 Determine the cost of redistributing existing substitutes.
  - 3.2 Determine rationale for substituting non-type classified items for authorized items.
  - 3.3 Recommend a policy for within-Line Item Number (LIN) "substitution."
  - 3.4 Determine rationale and feasibility of loaning rather than issuing substitute items.

4. Scope. Substitution as it pertains to major items only is investigated.

Though the recommendations are directed at DARCOM, the implementation of these recommendations will impact all levels of the Army hierarchy.

5. Methodology. The study findings were gleaned from existing regulations and from cognizant personnel at DARCOM and other commands outside DARCOM.

An Army Equipment Status Reporting System (AESRS) report titled, "AESRS Substitution Data," was analyzed by authorized and substituted LINs for each Materiel Readiness Command (MRC) and a magnetic tape titled, "AESRS Report of Substitute Items" (Depot Systems Command (DESCOM) RIN K01PBY4134R) was analyzed in detail for authorized-substituted item relationships.

6. Report Format. This report consists of two volumes. Volume I is broken up into two sections: Section I deals with administrative information while Section II with the results of the study. Volume II provides listings of authorized LINs and substitutes for these items.

7. Findings and Conclusions.

7.1 Ideally, there should not be a need for substitutes; but since a need does exist, the alternative is to better manage the substitutes and decrease where possible the numbers and types of items that are so used.

7.2 The listings of authorized substitutes, developed as a result of the Logistics Studies Office (LSO) Study 810, will strongly influence how substitutes are used in the future. This listing is a dynamic tool; and as it evolves, will increasingly impact all levels in the Army hierarchy as to how substitutes are used.

7.3 The recommendations below will also improve the substitution process.

8. Recommendations.

8.1 Further exploratory work dealing with the feasibility study for the redistribution of excess and substitute major items be delayed until a mechanism for providing necessary shipment and cost data is available.

8.2 Non-type classified major items should not be considered for use as substitutes.

8.3 Only Standard A or Standard B items should be provided the requisitioner unless DA has authorized an individual exception.

8.4 Policy for substituting major items be formalized and included in AR 700-120.

8.5 The lending of major item substitutes to users other than industrial users should not be considered as DARCOM policy.

8.6 A listing for each National Inventory Control Point (NICP) of authorized items by LIN and the substitutes used for them, prepared during this study, be provided to knowledgeable personnel in DARCOM and DA. Each reviewee will annotate the list to indicate those items that are good substitutes (ST1), those that are marginal substitutes (ST2), and those items that should not be used as substitutes and cannot be called substitutes.

8.7 A listing (by Major Command (MACOM) and installation code prepared during this study, of authorized items and substitutes used for them, by LIN) be provided to DA and each MACOM to appraise the MACOMs of the magnitude of the substitution problem and to take any action they deem necessary.

8.8 A concept for quantitatively rating the effectiveness of on-hand substitutes for readiness reporting be reviewed by HQ DARCOM and the MACOMs for evaluation and action necessary for its implementation and inclusion in AR 220-1.

MAIN REPORT

SECTION I - ADMINISTRATIVE INFORMATION

1. Problem and Background.

1.1 Definition.

1.1.1 The word "substitute" is a noun defined in Webster's New Collegiate Dictionary (1977) as:

...a person or thing that takes the place of another.

1.1.2 The Army Dictionary (AR 310-25) defines "substitution item" as:

An item authorized for issue in lieu of a standard item of like nature and quality.

1.1.3 An often used synonym for "substitute" is "in lieu of," as in "one item in lieu of another."

1.2 Background. The substitution of major items was studied in depth by the Logistics Studies Office (LSO) in 1978. Background on the substitution process may be found in the report, "Substitution Criteria and Policy for Major Items," LSO Project 810, January 1979. The recommendations in the study were accepted and approved by Headquarters, US Army Materiel Development and Readiness Command (HQ DARCOM) for implementation. These recommendations were:

1.2.1 HQ DARCOM direct the preparation of a listing of authorized substitute major items; and after staffing and review by Major Commands (MACOMs), the approved list be published in a supply bulletin and distributed to MACOMs and Materiel Readiness Commands (MRCs).

1.2.2 All procedures dealing with the listing of authorized substitute major items and the procedures for requisitioning authorized items or authorized substitutes be prepared and incorporated in an Army publication, such as AR 700-120.

1.2.3 Conflicting paragraphs in AR 710-2 be changed as outlined in the study report.

1.2.4 HQ DARCOM direct that a feasibility simulation study on redistribution of excess and substitute major items be performed by the Total Army Equipment Distribution Program (TAEDP) system; and that where a redistribution proves feasible, it be carried out.

1.2.5 All recommendations were accepted for implementation. The first recommendation has been implemented at the US Army Depot Systems Command (DESCOM), and a preliminary listing has been prepared. An example of a listing page may be seen in Figure 1-1. The current listing consists of 239 different authorized Line Item Numbers (LINs), 238 Substitute Type 1 (ST1 or good substitutes) LINs, and 143 Substitute Type 2 (ST2 or marginal substitutes) LINs. More LINs will be included in the listing as a result of further work at DESCOM and this study.

1.3 Purpose of Study. This study proposes to provide guidance on how substitute major items can be more efficiently managed within DARCOM.

2. Study Objectives. Four objectives were stated:

2.1 Determine the Cost of Redistributing Current Substitutes.

2.1.1 In LSO Project 810, it was found that the total number of existing substitutes could be decreased significantly if a redistribution of excess and substituted items was made. The findings indicated that in most cases where a redistribution had potential, the affected units would get the item that they were authorized without changing the net asset balances for them or for other units. The example in Figure 1-2 exemplifies the intent of the objective (LINs shown are fictitious).

SUBSTITUTE ITEM LIST  
SEQUENCE RIC, AUTH LIN, SUB LIN1, SUB LIN2

RIC	AUTH LIN	SUB LIN1	SUB LIN2	LIN NOMENCLATURE	
AKZ	X39453	X39735		TRK CGC 3/4T M3781	B
AKZ	X39453	X39872		TRK CGC 3/4T WW M3781	B
AKZ	X39453	X39883		TRK CGC 1-1/4T M715	B
AKZ	X39453	X39926		TRK CGC 1-1/4T M715 WW	B
AKZ	X40009			TRK CGC 2-1/2T M35A2	A
AKZ	X40009	X40077		TRK CGC 2-1/2T M35A2C	B
AKZ	X40009	X40146		TRK CGC 2-1/2T M35A2WW	B
AKZ	X40009	X40214		TRK CGC M35A2C WW	B
AKZ	X40077			TRK CGC 2-1/2T M35A2C	A
AKZ	X40077	X40214		TRK CGC M35A2C WW	B
AKZ	X40077		X40009	TRK CGC 2-1/2T M35A2	C
AKZ	X40146			TRK CGC 2-1/2T M35A2WW	A
AKZ	X40146			TRK CGC 2-1/2T M35A2WW	A
AKZ	X40146	X40214		TRK CGC M35A2C WW	B
AKZ	X40146			TRK CGC 2-1/2T M35A2	C
AKZ	X40146		X40077	TRK CGC 2-1/2T M35A2C	C
AKZ	X40214			TRK CGC M35A2C WW	A
AKZ	X40214		X40009	TRK CGC 2-1/2T M35A2	C
AKZ	X40214		X40077	TRK CGC 2-1/2T M35A2C	C
AKZ	X40214		X40146	TRK CGC 2-1/2T M35A2WW	C
AKZ	X40283			TRK CGC 2-1/2T M36A2	A
AKZ	X40283	X40420		TRK CGC M36A2 WW	B
AKZ	X40794			TRK CGC ST M813A1	A
AKZ	X40794	X40931		TRK CGC ST M813A1 WW	B
AKZ	X40794		X40831	TRK CGC ST 6x6 M813	C
AKZ	X40794		X40968	TRK CGC 5% 6x6 M813 WW	C

Figure 1-1

SAMPLE PAGE FROM SUBSTITUTE ITEM LIST

BEFORE REDISTRIBUTION

Unit	Authorized Quantity			On-Hand Quantity		
	X11111	X22222	X33333	X11111	X22222	X33333
A	5				3	2
B		5		4		1
C			5	2	3	
<b>Total</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>3</b>

REDISTRIBUTION

From Unit	To Unit	LIN	Quantity
A	B	X22222	3
A	C	X33333	2
B	C	X33333	1
B	A	X11111	4
C	A	X11111	1
C	B	X22222	2
<b>Total</b>			<b>13</b>

AFTER REDISTRIBUTION

Unit	Authorized Quantity			On-Hand Quantity		
	X11111	X22222	X33333	X11111	X22222	X33333
A	5			5		
B		5			5	
C			5	1	1	3
<b>Total</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>3</b>

- a. Number of items redistributed: 13
- b. Number of units affected by redistribution: 3
- c. Total cost of moving redistributed items: \$ \$\$
- d. Number of LINs used as substitutes before redistribution: 3
- e. Number of LINs used as substitutes after redistribution: 2
- f. Number of items used as substitutes and excess before redistribution: 15
- g. Number of items used as substitutes and excess after redistribution: 2

Figure I-2

INTENT OF REDISTRIBUTING CURRENT SUBSTITUTES

2.1.2 The preliminary analysis that was performed in LSO Project 810 did not take into consideration geographical and political constraints that would decrease the numbers of items that were potential candidates for redistribution during an actual redistribution. For example, the costs would be prohibitive if materiel were redistributed from Korea to Germany. Also, the movement of National Guard materiel across state lines may in some cases not be politically expedient.

2.1.3 This objective was to determine the sum of all costs for moving all designated materiel from one unit to another for all units that had redistributable items. Current redistribution practices are not affected by this objective.

2.2 Determine Rationale for Substituting a Non-Type Classified Item for an Authorized Item.

2.2.1 Generally, non-type classified items fall into two categories:

2.2.1.1 Those items of commercial equipment costing between \$25 and \$1000 for which there is no satisfactory standard or adopted item in the supply system.

2.2.1.2 Those commercial items costing over \$1000 (other than Procurement Army (PA) funded) awaiting assignment of a standard LIN and National Stock Number (NSN).

2.2.1.3 Types of materiel exempted from type classification may be found in AR 70-61, Type Classification of Army Materiel, August 1978, paragraph 1-9.

2.2.2 The objective is to determine the rationale for using major items in the first category, 2.2.1.1 above, as substitutes.

2.3 Recommend a Policy for Within-LIN Substitutions. Within-LIN substitutions are substitutions in the sense that one item is replaced or substituted for another, but are not substitutions in the sense used throughout this report.

AR 60-1, paragraph 2-1c, states:

All items appearing under the same Line Item Number (LIN) are considered qualified to satisfy the requirement represented by that LIN.

2.4 Determine Rationale and Feasibility of Loaning Rather than Issuing Substitute Items. Under existing procedures when an Inventory Control Point (ICP) fills a requisition for an item, the ICP and DARCOM lose ownership and thus control of that item. The objective is to determine if substitutes could be better managed if they were loaned to the requisitioners permitting DARCOM to retain ownership of the item.

3. Scope of the Study. In this study, only the substitution of major items is considered. Though the findings and recommendations impact all levels of the US Army hierarchy to include the Active Army, the Army National Guard, and the Army Reserve, the point of reference is that of DARCOM. DARCOM policies may impact the other MACOMs, but cannot be directly imposed on them by DARCOM.

4. Outline of the Report. This report is published in two volumes:

4.1 Volume I is broken up into sections. Section I provides administrative materiel relating to why the study was performed. Section II discusses the results of the study. Also, the objectives stated in Section I are each addressed, then the additional areas studied but not directly relatable to an objective are discussed, findings are then summarized, and recommendations made. Appendix A contains reference material; Appendix B is a Glossary of Terms and Abbreviations.

4.2 Volume II contains primarily two appendixes. Appendix A is a listing of authorized LINs and substitutes used for them by manager code, and Appendix B is a listing of all existing substitutes in authorized LIN sequence. Limited

distribution will be made of this volume.

5. Discussion.

5.1 This study is based on several necessary premises and understandings.

These are that:

5.1.1 Substitution of major items cannot be eliminated completely at this time because of budgetary constraints.

5.1.2 For some items, substitution is necessary.

5.1.3 Where possible, the numbers and types of substitutes must be kept to a minimum.

5.1.4 The total number of units affected by substitution must be kept to a minimum.

5.2 Where a substitute is used, it must be carefully evaluated by both the organization providing the item and the unit using the item to insure that it will not adversely impact the unit's effectiveness in accomplishing its mission in the environment that the unit will be operating in. To this end, the following criteria should be used to evaluate the suitability of the substitute item\*:

5.2.1 The substitute must require the same number and type of operating personnel.

5.2.2 It must carry the same main armament.

5.2.3 It must be able to use the same kind of repair equipment.

5.2.4 It must be built using the same principal components.

---

\* Taken from ALM-41-4301-LC(A), Management of Major Items in Department of the Army, page 474. Contained in Lesson Book for Logistics Management Development Correspondence Book, Subcourse ALM 48-54, November 1976.

5.2.5 It must have the same air transportability characteristics.

5.2.6 It must use the same firing tables.

5.2.7 It must be able to use similar, though not necessarily the same, repair parts.

5.2.8 Operators should not require retraining to use the item.

5.2.9 An additional list of criteria is found in LSO Study 810, Substitution Criteria and Policy for Major Items, January 1979, page 11.

5.3 Because of readiness requirements and the effect that the readiness rating has on the unit commander's career, the phrase "something is better than nothing" is often used. Under garrison conditions, this may have a veneer of truth; but under combat conditions, this way of thinking could lead to disaster. An unsuitable substitute in one unit can hinder an operation more than help it, and the use of that substitute by that unit has probably deprived another unit of a piece of mission-essential equipment which may injure or impair that unit's effectiveness.

MAIN REPORT (Continued)

SECTION II - RESULTS OF STUDY

1. Redistribution of Substitute and Excess Major Items.

1.1 To determine the cost of redistributing over 292,000 items, one must determine which items will be redistributed, which units will give up the item, and which units will receive the item. The Total Army Equipment Distribution Program (TAEDP) has the capability to do part of this. Following this, transportation costs and packaging costs must be determined for each item that is involved in the redistribution. The sum of the transportation and packaging costs for all items moved provides the total redistribution cost. Credits for turn-ins and charges for received items are not considered since it is assumed that qualified inspectors would insure that the items leaving a unit would be in serviceable condition.

1.2 TAEDP has not been available to perform the actual redistribution simulation for this study. Further, to perform a complete redistribution using TAEDP would require much additional programming of the system. At this time, the system can provide a picture in time of the types and number of assets in each Army unit's possession; and following a redistribution, a picture of the resultant distribution. Additional programming would be required to show the origin and destination of the redistributed items. TAEDP cannot provide the packing and transportation costs resulting from the item redistribution.

1.3 Further work to determine the cost and feasibility of redistributing excess and substituted items should be delayed until a mechanism for providing necessary shipment and cost data is available.

1.4 Preliminary findings showed that from 30-50 percent of many categories of major items that are now filled by substitutes could be filled with the authorized items if a redistribution were carried out. An earlier study (LSO Project 810, Substitution Criteria and Policy for Major Items, January 1979) demonstrated that under ideal conditions 58 percent of 5 ton truck substitutes, 44 percent of 1 1/4 ton truck substitutes, and 29 percent of 2 1/2 ton truck substitutes could be eliminated through an ideal redistribution. In numbers, 4520 5-ton, 1096 1 1/4-ton, and 3597 2 1/2-ton truck substitutes could be eliminated.

1.5 Limited redistribution of some items could be worthwhile. By limited is meant within the boundaries of state and/or where distances are short. Moving costs could be minimized by having units perform their own moves and perhaps this would be a good limit on the redistribution--only those items that the unit can transfer itself, using its own vehicles, should be redistributed.

1.6 Before a redistribution is made or contemplated, regulatory guidance must be developed to insure that the number of substitutes and excesses do not build up again after the redistribution. This regulatory guidance must incorporate the following points, as a minimum.

1.7 A listing of authorized substitutes, divided into Substitute Type 1 (ST1 or good substitutes) and Substitute Type 2 (ST2 or marginal substitutes), must include all authorized items and must be reviewed and approved by Materiel Readiness Commands (MRCs) and Major Commands (MACOMs). Once accepted, this list will be a functional tool for all those personnel involved in the distribution of items. When offering a substitute, MRCs would only offer the authorized ST1 or ST2 substitute and only that item under the appropriate

LIN that had a Logistics Control Code (LCC) of A or B.

1.8 When a unit has on hand a substitute item that is an authorized ST1 substitute, the authorized item will not be requisitioned until either the ST1 classification changes to ST2 or is no longer considered a substitute. Item managers will be provided quarterly listings of units having the items they manage as ST1 substitutes.

1.9 When a unit has on hand a substitute item that is classified ST2, the unit will requisition through channels the authorized item. This ST2 item will be retained by the unit until an ST1 is provided or the authorized item is provided at which time the ST2 item will be classified as excess and immediately turned in. At the National Inventory Control Point (NICP), the requisition will be filled with either the authorized item or an ST1 item or the requisition will be kept on back order.

1.10 When a unit has an item on hand that is not an authorized substitute, the unit will requisition the authorized item and retain the on-hand item until the authorized item or an ST1 or ST2 item is provided. On receipt of the authorized item or the ST1 or ST2 substitute, the unit will immediately turn in the on-hand item as excess. If the unit receives an ST2 substitute from other than an NICP, it will requisition the authorized item and retain the ST2 item until the authorized item is provided or an ST1 item is provided. At that time, the ST2 item will be turned in as excess. At the NICP, when a unit is provided an ST2 item by the NICP, the NICP will retain the original requisition on back order until it can provide the authorized item or an ST1 item. In every instance that an NICP provides an ST2 item to a unit, it will automatically place a copy of the original requisition on back order. A unit that is provided an ST2 item by other than an NICP will have to resubmit a requisition for the authorized item.

1.11 Phased Equipment Modernization (PEM) must be brought "on-line" as soon as possible. This will eliminate some instances of substitution.

2. Non-Type Classified Items.

2.1 To use these items as substitutes would increase the numbers of types of substitutes and the quantity of substitutes in use. This goes against one of the premises stated earlier. Their use as substitutes could be justified if the results were that high Department of the Army Master Priority List (DAMPL) units could decrease their reliance on substitution, but only under these conditions.

2.2 Further, there are very few such items that could be used as substitutes, Supply Bulletin 700-20, July 1978, lists TDA items not requiring type classification in Chapter 6 and non-type classified non-Procurement Army (PA) commercial items in Chapter 7. In Chapter 7, only 43 of a total of 757 (5.6 percent) different Line Item Numbers (LINs) are supply class 7 and, therefore, could be candidates for this type of substitution.

3. Policy for Within-LIN Substitutions.

3.1 Within-LIN substitution is technically not a substitution at all. This type of substitution involves the replacement of one item having a specific LIN and National Stock Number (NSN) by another item that has the same LIN but a different NSN (See example, Figure 11-1. AR 70-61, August 1978, paragraph 2-1c states that all items appearing under the same LIN are considered qualified to satisfy the requirements represented by that LIN. By definition, items that have the same LIN are fully interchangeable even though the items have different NSNs. Technically, this is not completely true. All items listed under each LIN in Chapter 2 of SB 700-20 have a LCC. This LCC is a one-character alpha code assigned Army adopted items (LIN-related items) and

LIN	NSN	LCC	GENERIC NOMENCLATURE			UNIT PRICE	UI	C M	R C	TYPE CLASS	REFERENCE DATA
			NSN OR ACVC	NSN OR ACVC	NSN OR ACVC						
X-9836	2320-00-579-9846	7K	TRUCK CARGO, TACTICAL, 1/4 TON 4X2 W/60 AMP KIT W/E	TRK CGO 1 1/4T M891		4,200.00	EA	L	K AKZ	S	04766025
X-9841	2320-00-579-9899	7K	TRUCK CARGO, TACTICAL, 1/4 TON 4X4 W/ COMM SHELTER KIT W/E	TRK CGO 1 1/4T M898		5,546.00	EA	L	K AKZ	S	04766025
X-9844	2320-00-579-9843	7K	TRUCK CARGO, TACTICAL, 1/4 TON 4X4 W/60 AMP KIT W/E	TRK CGO 1 1/4T M890		6,010.00	EA	L	K AKZ	S	04766025
X-9847	2320-00-579-8915	7K	TRUCK CARGO, TACTICAL, 1/4 TON 4X4 W/60 AMP COMM KITS W/E	TRK CGO 1 1/4T M892		7,284.00	EA	L	K AKZ	S	04766025
X-9850	2320-00-579-8959	7K	TRUCK CARGO, TACTICAL, 1/4 TON 4X4 W/60 AMP COMM SHELTR KIT W/E	TRK CGO 1 1/4T M893		6,357.00	EA	L	K AKZ	S	04766025
X-9851	2320-00-579-8985	7K	TRUCK CARGO, TACTICAL, 1/4 TON 4X4 W/100 AMP COMM SHELTR KIT W/E	TRK CGO 1 1/4T M894		6,357.00	EA	L	K AKZ	S	04766025
X-9918	2320-00-542-4636	7K	TRUCK CARGO, 1/4 TON 4X4 W/E	TRK CGO 1/4T M701		4,236.00	EA	L	K AKZ	S	04766025
2320-00-542-4637	7K		TRK CGO 1/4T M701			3,756.00	EA	L	B	S	03792661
X-9907	2320-00-542-4612	7K	TRUCK CARGO, 1/4 TON 4X4 W/WINCH W/E	TRK CGO 1/4T M781 WW		4,498.00	EA	L	B	S	04766025
2320-00-542-4613	7K		TRK CGO 1/4T M781 WW			3,993.00	EA	L	B	S	03792661
X-9983	2320-00-921-6363	7K	TRUCK CARGO, 1/4 TON 4X4 W/E	TRK CGO 1 1/4T M715		4,050.00	EA	L	K AKZ	S	7006 69
X-9986	2320-00-921-6306	7K	TRUCK CARGO, 1/4 TON 4X4 W/WINCH W/E	TRK CGO 1 1/4T M715WW		4,300.00	EA	L	B	S	7006 69
X-9980	2320-00-721-5401	7K	TRUCK CARGO, 1/4 TON 6X6 W/E	TRK CGO 1 1/4T M561		12,312.00	EA	L	K AKZ	S	4704 04
X-40099	2320-00-072-1600	7K	TRUCK CARGO, 2 1/2 TON 6X6 W/E	TRK CGO 2 1/2T M1542		17,813.00	EA	L	K AKZ	S	1638 63
2320-00-542-5633	7K		TRK CGO 2 1/2T M1542			9,747.00	EA	L	B	S	1638 63
2320-00-542-5645	7K		TRK CGO 2 1/2T M1541			9,19	EA	L	S	C	127 62
2320-00-834-4507	7K		TRK CGO 2 1/2T M211			3,993.00	EA	L	S	C	9090 72
2320-00-835-8351	7K		TRK CGO 2 1/2T M115			6,250.00	EA	L	S	C	127 62
2320-00-835-8340	7K		TRK CGO 2 1/2T M03			7,951.00	EA	L	S	C	03776020
X-40107	2320-00-926-0871	7K	TRUCK CARGO, DROP SIDE 2 1/2 TON 6X6 W/E	TRK CGO 2 1/2T M35A2C		17,819.00	EA	L	K AKZ	S	7787 70
X-40146	2320-00-072-1617	7K	TRUCK CARGO, 2 1/2 TON 6X6 W/WINCH W/E	TRK CGO 2 1/2T M35A2		18,444.00	EA	L	K AKZ	S	1638 63
2320-00-542-5634	7K		TRK CGO 2 1/2T M35A1			10,059.00	EA	L	B	S	1638 63
2320-00-814-4508	7K		TRK CGO 2 1/2T M211			6,378.00	EA	L	S	C	9090 72
2320-00-835-8335	7K		TRK CGO 2 1/2T M035			6,647.00	EA	L	S	C	127 62
2320-00-835-8336	7K		TRK CGO 2 1/2T M114			7,132.00	EA	L	S	C	127 62
2320-00-835-8344	7K		TRK CGO 2 1/2T M35			8,374.00	EA	L	F	C	03776020
X-40214	2320-00-926-0875	7K	TRUCK CARGO, DROP SIDE 2 1/2 TON 6X6 W/WINCH W/E	TRK CGO 2 1/2T M35A2C WW		18,313.00	EA	L	K AKZ	S	7787 70
X-40201	2320-00-072-1618	7K	TRUCK CARGO, 2 1/2 TON 6X6 XLWB W/E	TRK CGO 2 1/2T M35A2		18,774.00	EA	L	K AKZ	S	1638 63
2320-00-391-0569	7K		TRK CGO 2 1/2T M35A1			8,854.00	EA	L	B	S	1638 63
X-40420	2320-00-072-1619	7K	TRUCK CARGO, 2 1/2 TON 6X6 XLWB W/WINCH W/E	TRK CGO 2 1/2T M35A2 WW		20,541.00	EA	L	K AKZ	S	1638 63
2320-00-647-0505	7K		TRK CGO 2 1/2T M35 WW			8,610.00	EA	L	S	C	02736120

Figure 11-1

LIN, NSN, AND LCC RELATIONSHIPS FOR AN ITEM

other items of materiel selected for authorization to provide a basis for logistical support decisions such as procurement, overhaul, repair parts, provisioning, requisitioning, distribution, etc. (see DARCOM-R 700-5, Appendix A). These codes are:

- A - Standard A
- B - Standard B
- C - Identifies items previously type classified "Standard C" under earlier regulations that are still in the inventory. New entries of this LCC are not authorized.
- D - Developmental
- F - Mission Essential Contingency Items (MECI)
- N - Not separately type classified
- O - Obsolete
- S - Contingency and Training
- T - Limited Production - Test
- U - Limited Production - Urgent

3.2 Items having an LCC of A\* are:

...items which are acceptable for the mission intended, or which can be acceptable during initial production, which will be provided full logistics support until a replacement item is approved or until the requirement is being phased out. This LCC is applicable to an item resulting from developmental effort and new nondevelopmental (including commercial acquisitions or product improved items) determined by an appropriate decision authority (Defense System Acquisition Review Council (DRSARC), ASARC, or IPR) to be suitable to satisfy the Army requirement. This is the item that would be procured and depot overhauled.

3.3 LCC B\*\* is:

applicable to items which are to be issued in lieu of LCC-A items. (LCC-B items will not be procured if the approved LCC-A item may be procured and deployed in time to satisfy the requirement.) Written justification supporting proposed procurement to LCC-B items will accompany Army Materiel Plan (AMP) submissions. The published AMP will constitute HQDA approval. Request for authority to procure LCC-B items not included in the current AMP will be approved/disapproved in a

\* Major Item Management Reference Book, ALM 41-4272-RB(B), September 1978, US Army Logistics Management Center, Fort Lee, VA.

\*\* Ibid.

case-by-case basis. The office which initiates a request for approval to procure an LCC-B item is the official office of record responsible for retention of request/approval documentation.

3.4 Units requisition major items by NSN. In most cases, the NSN is that of the Standard A (by LCC) or preferred item. If the item manager has the Standard A item available and if the unit's DAMPL priority is high enough, he will fill the requisition with this item. If he does not have adequate Standard A items to fill the requisition or if the unit's DAMPL priority is not high enough, those item managers that offer substitutes will offer a Standard B item in lieu of the Standard A item. Items with LCCs other than A or B are generally not offered by item managers to fill requisitions. This is accepted policy at all MRCs.

#### 4. Lending Substitute Items to Units.

4.1 The lending of substitutes to Table of Organization and Equipment/Table of Distribution and Allowances (TOE/TDA) units has been proposed as a means of better controlling substitutes and adding flexibility to the use of substitutes. The reasoning is that when an item is loaned by an MRC, ownership of this item would be retained by US Army Materiel Development and Readiness Command (DARCOM) (the MRC) and this would make it easier to transfer the items if this were required from the borrowing unit to another unit that needs it. Ownership for substitutes now received by units is transferred from the MRC to the unit.

4.2 The loans that are currently made by MRCs create problems. The loan recipients do not renew the loan agreements when they should, some equipment is never returned, equipment that is returned is often not in serviceable

condition, and even though the borrower must return borrowed items in a serviceable condition or pay for their repair this is not always done.

4.3 With the above as background, it appears that if MRCs were to loan substitutes to TOE/TDA units, more problems would be encountered by the MRCs than the benefits derived from doing this.

4.4 If the loan policy were to be changed to permit loans to TOE/TDA units, the following procedures would alleviate many of the potential problems:

4.4.1 The loan agreement would be between the MRC and the MACOM of the borrowing unit; and the MACOM would be responsible for updating the loan agreement, for returning the borrowed item in a serviceable condition, or for paying for its repair.

4.4.2 More emphasis would have to be placed on the management of loans by the user.

4.4.3 The loan would be processed at the MRC as industrial loans now are.

5. Other Areas of Investigation. The following areas of investigation are not directly relatable to one of the above four study objectives but fall under the study umbrella in that they may lead to clarifying how substitutes are used and how they may be better controlled. A listing of authorized substitutes has been prepared by Depot Systems Command (DESCOM). Figure I-1, page 6, shows a sample page from the listing. In order to increase the number of LINs in the listing to make it more complete and to determine the numbers and types of substitutes that are inappropriately used, the following work was done. A complete listing of existing substitutes in the form of a magnetic computer tape (DESCOM RIN K01PB4134R, data as of 15 December 1979) was obtained from DESCOM and analyzed as described below:

5.1 Substitutes by MRC.

5.1.1 One analysis sorted the complete tape by manager code (MRC code); and for each indicated, the authorized LIN (ALIN), the on-hand LIN (OLIN), nomenclature of the OLIN, NSN of the OLIN, instances of occurrence of this type of substitution (INST), the quantity of items used in this manner (QTY), and the manager code (MGR) which consists of the primary manager in the first position and the secondary manager in the second position. A sample listing (partial) prepared for manager code K (US Army Tank-Automotive Materiel Readiness Command--TARCOM and where manager code K was in all instances the primary or secondary manager) is shown in Figure 11-2. Where a blank is shown in the ALIN column, the printed ALIN is operative. For example, under LIN D12087, 113 units (from INST column) are using 14 different LINs as substitutes and 625 items (from QTY column) are involved.

5.1.2 A further analysis of manager codes was performed to determine how the instances of substitution were distributed among the MRCs. Figure 11-3 shows a classification by primary manager and by primary-secondary manager interactions, the number of instances (INST) where that particular manager code sequence occurred, and the quantity of items (QTY) falling under that manager code sequence. For example, where the primary and secondary manager code was B, 3873 different occurrences were recorded for a total of 94,973 items affected.

5.1.3 Listings such as that shown in Figure 11-2 for all MRCs may be seen in Volume 11, Appendix A. A complete listing in ALIN order of all substitutes may be seen in Volume 11, Appendix B. This listing is sequenced by ALIN.

5.1.4 It is proposed that HQ DARCOM distribute the listing in Appendix A of Volume 11 to functional experts in DA and throughout DARCOM with a request that

ALIN	OLIN	NUMENCLATURE	NSN	INST	QTY	MGH
99999Y	Y99990	TLR CGU 1-1/2 T M104	2330007540509	1	1	K
A28833	X62340	TRK VAN SHOP M220	2320008358600	1	1	GK
B01854	B01756	AUGER HOM-9	3820003910514	1	2	K
B04441	X60833	TRK UTIL 1/4T M151A2	2320001779258	1	1	KK
B04715	X60833	TRK UTIL 1/4T M151A1	2320007631092	2	3	KK
C04516	C03283	800M CHN AMEW HST	3815009967124	1	1	KK
C05064	C04105	800M CHN 8558G	3815006188100	1	3	KK
	C04653	800M EXT MIL-STD-179	3815005404756	1	1	KK
C05475	C05612	800M JIB 8558G/8G2PC	3815006188102	1	1	KK
C36100	C36120	BLDR EARTH MVG M9	2590007083563	1	1	KK
D10726	X39940	TRK CGU 1-1/4T M561	2320008735407	2	7	KK
D11049	X40009	TRK CGU 2 1/2T M211	2320008344507	3	8	KK
	X40146	TRK CGU 2 1/2T M211	2320008344508	3	6	KK
	X40831	TRK CGU 5 TON M54	2320008358348	1	4	KK
	X41790	TRK CGU 10T M125 W/WN	2320002197340	1	3	KK
D11401	X60833	TRK UTIL 1/4T M151A1	2320007631092	1	16	KK
D11538	010990	CARRIER CGU AMPH M116	2350004112057	1	4	KK
	D12087	CARRIER PERS M113	2350006291294	1	1	KK
	X40009	TRK CGU 2 1/2T M211	2320008344507	2	2	KK
	X60833	TRK UTIL 1/4T M151A1	2320007631092	1	1	KK
	X62340	TRK VAN SHOP M109A1	2320006908365	15	20	KK
	X62477	TRK VAN SHOP M109A2	2320004408308	1	1	KK
U11681	X61244	TRK UTIL 1/4T M151A1C	2320007631091	1	2	LK
D12087	D11401	CARRIER C-R F1 M114A2	2350009376189	1	2	KK
	D11538	CARR CMND PUST M577A1	2350000566808	3	9	KK
	D11681	CARRIER GM EQP LES WE	1450001762697	1	2	KL
	K87230	INS KT MK-1221/VRC-12	5820004506793	2	2	KG
	K87243	INSTL KT MK-1234/G	5820004506804	7	33	KG
	K87269	INS KT MK-1306/VRC-47	5820001938348	3	14	KG
	K87330	INS KT MK-1445/VRC-47	5820004019667	1	1	KG
	L92386	MG 7.62MM M60	1005006057710	8	34	KM
	M75029	MT MG PED ON TRK M151	1005009732833	6	28	KM
	M75714	MT TPD MG 7.62MM M122	1005007105599	1	11	KM
	W95400	TLR CGU 1/4TUN M416	2330007065495	4	45	KK
	X39429	TRK CGU 1-1/4T M890	2320005798991	1	1	KK
	X39432	TRK CGU 1-1/4T M880	2320005798942	1	2	KK
	X60833	TRK UTIL 1/4T M151A1	2320007631092	74	401	KK
079481	X39441	TRK CGU 1-1/4T M885	2320005798989	1	2	GK
E02533	E02807	CHAS TRL GEN M200A1	2330003312307	1	3	LK
E02670	E02395	CHASSIS TRL MILVAN	2330001682259	1	1	KK
	E02807	CHAS TRL GEN M200A1	2330003312307	5	71	XX
E02807	E02670	CHASSIS TRL GP M353	2330005422831	17	35	KK
	J35414	GEN ST TM PU-401/M	6115008252217	1	2	KK
	J36385	GEN ST TM PU-406A/M	6115007386342	1	1	KK
	Y99990	CHASSIS TRAILER M200	2330008358690	3	6	KK
E02944	E02807	CHAS TRL GEN M200A1	2330003312307	1	1	KK
E33626	U76734	SWEPEK MAG JD401B	3825005980045	1	2	K
E40961	S75038	SILK VAN SHOP M146	2330005699372	1	1	KK
E56578	V12964	TANK CMBT 90MM M48A2C	2350006194812	1	1	KK
E61041	W76816	TRCTR FT HYD CAT U/E	2410007821150	1	1	KK

Figure 11-2

TARCOM SUBSTITUTES

MGR	INST	QTY
B	55	130
C	4	28
F	72	2522
G	324	622
H	6	6
J	6	6
K	261	735
L	2	2
M	137	275
P	11	15
Q	4	5
BB	3873	94973
BG	30	37
BH	1	1
BJ	11	13
BK	377	773
BM	16	16
CC	36	63
EB	12	80
EE	7	11
EG	5	7
EH	3	6
EJ	1	1
EK	3	3
EM	44	121
FF	1172	82761
FH	1	2
FM	1	2
GB	25	223
GG	11210	54277
GJ	1	1
GK	135	247
GL	1	3
GM	49	989
GP	3	4
GO	14	17

Figure 11-3

ANALYSIS OF MANAGER CODES SHOWING INSTANCES OF SUBSTITUTION AMONG THE MRCs

MGR	INST	QTY
HB	4	40
HF	1	2
HG	3	6
HH	305	3014
HK	20	23
HM	4	8
JB	23	33
JE	8	9
JG	1	1
JJ	73	84
JR	4	5
KB	17	39
KG	37	97
KH	2	2
KJ	1	1
KK	8600	31862
KL	5	12
KM	23	81
LG	47	94
LK	87	646
LL	33	247
LM	179	1891
MB	29	125
ME	14	187
MG	40	97
MK	45	75
MM	2141	13280
PG	52	92
PK	7	9
PP	18	90
QG	9	46
QQ	3	40
RB	1	1
RR	5	5
UG	29	40

Figure 11-3 (Continued)

ANALYSIS OF MANAGER CODES SHOWING INSTANCES OF SUBSTITUTION AMONG THE MRCs

the recipients screen the listing and indicate on the listing itself which substitute items are good substitutes, equal to, or better than the authorized item (ST1); which are not as good as the authorized item in characteristics (ST2); and which substitutes should not be used as substitutes. When HQ DARCOM receives the annotated listings, DESCOM can be tasked with adding those LINs annotated to be ST1 or ST2 to the listing of authorized LINs.

### 5.2 Substitutes by MACOM and Installation Code (IC).

5.2.1 To appraise DA and each MACOM of the substitute situation in the units, a listing of authorized LINs and the substitutes used for these LINs was prepared by MACOM and within MACOM by installation code. A sample of this listing (partial) is shown in Figure 11-4. A complete listing has not been included in this report because of the listing size\*. The headings are defined as follows:

XMT XMTR, Transmitter Code - A two-digit alpha-numeric code indicating the specific major command, Army area, or location of a unit.

- AA - Training and Doctrine Command - Active Army.
- AB - Training and Doctrine Command - Army Reserve.
- CA - Forces Command - Active Army (includes CONUS, Hawaii, Alaska, and Panama).
- CB - Forces Command - Army Reserve (includes CONUS, Hawaii, Alaska, and Panama).
- GA - Military District of Washington.
- H - National Guard.
- 1A - US Army, Europe - Active Army.
- 1B - US Army, Europe - USAR Schools.
- 2B - US Army, Japan (includes Okinawa).
- 2C - Eighth US Army and Korea.
- DA - US Army, Communications Command

\* This listing may be obtained from the Logistics Studies Office by calling the author at AV 687-2419 or by writing to the address on the cover before November 1980.

XMT	IC	ALIN	ULIN	LCC	NUMENCLATURE	INST	QTY
1A	AB	K87243	K87241	A	INSTL KT MK-1232/GHC	2	4
1A	AB		K87285	A	INSTL KIT MK-1402/G	3	7
1A	AB	K90188	X62340	A	TRK VAN SHUP M109A3	1	1
1A	AB	M20069	M37513	A	METR AUV LV ME-71/FCC	1	1
1A	AB	M80002	M81372	S	MULTIMETER TS-352/U	1	1
1A	AB	M80242	M81372	A	MULTIMETER TS-352B/U	6	54
1A	AB	M81372	M80242	A	MULTIMETER AN/USM-223	1	2
1A	AB	P27819	J36383	A	GEN ST TM PU-406A/M	1	1
1A	AB	P38586	P37218	A	POWER SUP PP-1104C/G	1	3
1A	AB	P40745	P37218	A	POWER SUP PP-1104/G	1	1
1A	AB	Q23832	W23831	A	ROU RPT AN/TRC-110PCM	1	4
1A	AB	Q92899	Q92854	A	ROU T S AN/TRC-117 LP	1	4
1A	AB	R47356	R47361	B	RECORDEER RPR AN/TNH17	1	2
1A	AB	R78067	W25831	A	ROU RPT AN/TRC-110PCM	1	2
1A	AB	T58895	V31452	A	TER TP AN/TCC-13V2 LP	2	16
1A	AB	V36145	V36899	B	TELETYPEWRTR TT-98/FG	1	6
1A	AB		V37858	B	TELETYPEWRTR TT-17B/FG	1	1
1A	AB		V39913	B	TTWRTR ST AN/FGC-25X	2	17
1A	AB	V48989	V48852	A	TENT GP MED W/LINES	1	4
1A	AB	V49126	V49143	A	TENT GP SML COMPLETE	1	12
1A	AB		V49537	A	TENT HEX COMPLETE	1	5
1A	AB	V49537	V49674	A	TENT HEX CUMPOENTS	1	50
1A	AB	V49948	V49811	A	TENT KITCHEN COMPLETE	1	1
1A	AB	V55860	V31417	A	TML TP AN/TCC-60 L/P	2	10
1A	AB	V93950	A55372	A	ANAL DATA TS-3378/G	1	1
1A	AB		J56382	A	GEN SIGNAL SG-1054/U	1	1
1A	AB		V98888	A	IST TT TS-800/UGM-1	1	2
1A	AB	V94740	M80242	A	MULTIMETER AN/USM-223	1	5
1A	AB	W29716	W37388	A	TOOL KT E EU TR-105/G	1	1
1A	AB	W94578	W94536	A	TLR BUL G/P 4T M796	1	5
1A	AB	X39432	X39429	A	TRK CGO 1-1/4T M890	1	3
1A	AB		X39447	A	TRK CGO 1-1/4T M882	1	1
1A	AB	X39453	X39429	A	TRK CGO 1-1/4T M890	1	1
1A	AB	X40009	X40146	A	TRK CGO 2 1/2T M35A2	12	245
1A	AB	X57271	X57408	A	TRK FS 2 1/2T M49A2C	1	1
1A	AB	X59326	X59463	A	TRK TRAC M818 W/WN	5	24
1A	AB	X62237	X61929	S	TRK VAN EXP M292	3	3
1A	AC	V49811	V49948	A	TENT KITCHEN CUMPOENT	1	1
1A	AD	F06972	F06835	A	CUNVR BELT PBL UVN UT	1	1
1A	AD	V48989	V48852	A	TENT GP MED W/LINES	1	4
1A	AD	V49126	V49143	A	TENT GP SML COMPLETE	1	1
1A	AE	867218	867766	A	BINOCULAR MUD RET M19	1	10
1A	AE	C68719	C68856	A	CA TP WD-1/1T RL-159	1	6
1A	AE	C85494	C83897	S	CAMERA S STL P KS-988	1	1
1A	AE		C84775	B	CAMERA ST S PIC KS-48	1	1
1A	AE	G63173	G62926	N	DRILL MACH U K FL 2	1	1
1A	AE	H56802	H56528	A	FI FHI EU S1 BR CL530	1	1
1A	AE		X44941	B	TRK FAM A FIL M454A2	1	3
1A	AE	J38712	J38547	B	GEN ST UED JIA U8001M	1	2
1A	AE	J53712	J56796	B	GEN SIG TS-382/U	1	2
1A	AE	K87243	K87285	A	INSTL KIT MK-1402/G	1	1

Figure 11-4

SUBSTITUTES BY MACOM AND INSTALLATION CODE

IC	Installation Code. Assigned to each installation in their respective commands so that the installation at which the unit is located may be identified.
ALIN	The LIN of the authorized item.
OLIN	The LIN of the item that is on hand as a substitute for the ALIN.
LCC	Logistics Control Code of OLIN.
NOMENCLATURE	The short nomenclature for the OLIN.
INST	The number of times (or number of units) that the occurrence of a specific OLIN-ALIN match was found.
QTY	The number of items that are used as OLINs for the ALIN.

5.2.2 It is proposed that HQ DARCOM distribute to each MACOM that section of the listing which pertains to it and a total listing to DA as information. It is also proposed that once the functional experts have annotated the listing described in 5.1 above, a listing be made of those substitutes that are inappropriate and the units holding the inappropriate substitutes identified, listed, and provided to the unit's MACOM for action it deems appropriate.

5.3 The Impact of Substitute Items on Unit Readiness and a Procedure for Improving Unit Readiness.

5.3.1 Though by regulation a unit must have on hand or on requisition all items authorized by its applicable MTOE/MTDA because of readiness requirements and its impact on a unit commander's efficiency rating, a unit cannot afford to go without some item to fill their requirement. To do this, a unit will accept a substitute; and in many cases, it can be any substitute that comes close to providing the same service as the authorized item.

5.3.2 In readiness reporting, too often a substitute will count as the authorized item so long as it is a one-for-one type substitution. That is, in a hypothetically extreme case, where every piece of equipment that the unit has is a substitute (so long as it has no missing equipment), the unit's readiness is Readiness Condition (REDCON) 1. From the readiness standpoint, this is true

and acceptable so long as each of the substitutes is equal or better than the authorized item; that is, where each substitute is an ST1.

5.3.3 However, taking a similar hypothetically extreme situation where every authorized item had a substitute but in this case every substitute was worse than authorized (that is, ST2 or not an authorized substitute), it is obvious that even though the unit has by count a complete fill of equipment it cannot possibly be as effective in carrying out its Modification Table of Organization and Equipment/Modification Table of Distribution and Allowances (MTOE/MTDA) stated mission as it would if it had a complete fill of authorized equipment. Theoretically, its readiness is REDCON 1; functionally, its readiness would be considerably below that, probably in the not ready category, REDCON 4.

5.3.4 This points out a discrepancy in readiness reporting. The overall readiness posture of the Army using the criteria outlined above may be lower than what is now reported. A truer readiness posture would be presented if a rating scheme such as the following were adopted for substituted items.

5.3.4.1 Where a unit has on hand a substitute that is categorized as ST1, that item counts as a one-for-one replacement of the authorized item. ST1 substitutes do not change the readiness posture of a unit.

5.3.4.2 Where a unit has on hand a substitute that is categorized as ST2, that item counts as a replacement for a value such as 90 percent of the authorized item. ST2 substitutes will change the readiness posture of a unit.

5.3.4.3 Where a unit has on hand a substitute that is neither categorized as an ST1 nor an ST2, it has on hand an item that is not an authorized substitute. Since it is not an authorized substitute, it does not contribute to the

mission effectiveness of the unit. For readiness reporting, this item cannot be counted. These items will markedly affect the readiness status of a unit.

5.3.5 This readiness rating scheme for substitute items will in the long run improve the actual readiness of all units. It will also force units that are holding ST2 substitutes and items that pose as substitutes which are unauthorized to requisition the authorized item and either receive the authorized item or an ST1 substitute. Concurrently, units having ST2 substitutes preclude units from "hiding" assets under the guise of substitutes.

5.3.6 As a consequence of this rating scheme, NICPs will have a better basis for procuring needed, out-of-stock items.

5.3.7 It is proposed that the appropriate DARCOM directorates and MACOMs be presented this concept for evaluation; and if the concept has merit and is acceptable to DARCOM and DA, that it be incorporated in AR 220-1.

6. Findings and Conclusions. In a more perfect world where a more rotund eagle still clutched arrows in claws, the substitution of one major item for another would not be a consideration. There would be enough money, time, and innovation to preclude the necessity for substitution. The realities of our world dictate otherwise. Substitution of major items appears to be necessary. Given the realism of the situation, DARCOM must better manage the substitutes that it has. The listing of authorized major item substitutes will aid in accomplishing this; but without command emphasis at all echelons of the Army hierarchy on the management of substitutes, it is not enough. The four primary objectives presented above provide increasing insight into how management of substitutes could be improved. The other areas investigated during the course of this study will increase the visibility of the substitution problem and consequently

result in improvements in their management.

7. Recommendations: It is recommended that:

7.1 Further exploratory work dealing with the feasibility study for the redistribution of excess and substitute major items be delayed until a mechanism for providing necessary shipment and cost data is available. (Current redistribution actions are not affected).

7.2 Non-type classified major items not be considered for use as substitutes.

7.3 Only Standard A or Standard B items should be provided the requisitioner unless DA has authorized an individual exception.

7.4 Policy for substituting major items be formalized and included in AR 700-120.

7.5 The lending of major item substitutes to users other than industrial users not be DARCOM policy.

7.6 All actions outlined in paragraph 5.1 dealing with the listing of substitutes by manager code be implemented as stated in that paragraph.

7.7 All actions outlined in paragraph 5.2 dealing with the listing of substitutes by MACOM and installation code be implemented as stated in that paragraph.

7.8 The concept outlined in paragraph 5.3 dealing with unit readiness be presented to HQ DARCOM and the MACOMs for evaluation; and if the concept has merit and is acceptable to DARCOM and DA, that it be incorporated in AR 220-1.

**APPENDIX A**

**REFERENCES**

APPENDIX A

REFERENCES

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APPENDIX B

GLOSSARY OF TERMS AND ABBREVIATIONS

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GLOSSARY OF TERMS AND ABBREVIATIONS

AESRS	Army Equipment Status Reporting System
ALIN	Authorized Line Item Number
DAMPL	Department of the Army Master Priority List
DARCOM	US Army Materiel Development and Readiness Command
DESCOM	US Army Depot Systems Command
FORSCOM	US Army Forces Command
ICP	Inventory Control Point
INST	Instances of Occurrence of a Substitution
LCC	Logistics Control Code
LIN	Line Item Number
LSO	Logistics Studies Office, US Army Logistics Management Center, Fort Lee, VA
MACOM	Major Command
MECI	Mission Essential Contingency Items
MGR	Manager
MRC	Materiel Readiness Command
MTOE/MTDA	Modification Table of Organization and Equipment/Modification Table of Distribution and Allowances
NICP	National Inventory Control Point
NSN	National Stock Number
OLIN	On-hand Line Item Number
PA	Procurement Army
PEM	Phased Equipment Modernization

QTY	Quantity
REDCON	Readiness Condition
ST1	Substitute Type 1 or Good Substitutes
ST2	Substitute Type 2 or Managerial Substitutes
TAEDP	Total Army Equipment Distribution Program
TARCOM	US Army Tank-Automotive Materiel Readiness Command
TRADOC	US Army Training and Doctrine Command
TOE/TDA	Table of Organization and Equipment/Table of Distribution and Allowances